Effect of diet on the quantity and quality of venom produced by Apis Cerana

ABSTRACT

The bee venom samples from honey bee (*Apis cerana)* foraged on seven plants dominating seven sites in Malaysia were collected. The protein content of the pollen loads of these test plants were tested according to the method of Kjeldahl (AOAC 1990). The samples were analysed to determine the effects of diet type on the quantity and quality of its constituents – melittin, phospholipase A_2 and apamin using HPLC.
The highest melittin (677.86µg/ml), phospholipase (477.96 µg/ml) and apamin (136.10 µg/ml) content were recorded in venom collected from honey bee colonies foraged on Durian plant which has protein content (31.7%) of its pollen loads. A positive correlation was recorded between the protein content with melittin (R^2= 0.9372), phospholipase A_2 (R^2= 0.7208) and apamin (R^2=0.4128), while a negative correlation was observed between the protein content and the weight of the venom mount produced (R^2= -0.7549). A direct relationship was observed between the quality of the venom and the protein content of pollen loads, while the quantity of the venom was not in accordance with the venom quality.

Keyword: Apis cerana; Bee venom, Bee diet; HPLC

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